

KAZANSKIY, B.A.

done Cyclization of iso-octane to form 1 : 1 : 3-trimethylcyclopentane.
A. L. Liberman, G. V. Lashina and B. A. Kazanskiy (Dokl. Akad.
Nauk, SSSR, 1955, 105, 727-730).—Purified isooctane was passed
 over a catalyst consisting of 20% Pt on carbon, at 310° and a space
 velocity of 0.16–0.19 hr.⁻¹. Small amounts of aromatic and
 unsaturated hydrocarbons were removed from the product by
 filtration through silica gel. The filtrate was fractionated in a pre-
 cision still to separate the 1 : 1 : 3-trimethylcyclopentane (the
 only cycloparaffin formed) from unchanged iso-octane. The tri-
 methylcyclopentane was identified by its b.p. (105.1°) and other
 physical constants. The proportion of it in the de-aromatized
 catalysate was initially nearly 30%, but diminished gradually to a
 steady 7% as the catalyst aged.

F. W. KIRKPATRICK

3

5000

PM

GILBERT, William; DOVATUR A.I. [translator]; KALASHNIKOV, A.G., redaktor; PETROVSKIY, I.G., akademik, redaktor; BYKOV, K.M., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor; ANDREYEV, N.N., akademik, redaktor; SHCHERBAKOV, D.I., akademik, redaktor; YUDIN, P.F., akademik, redaktor; DELONE, B.N., redaktor; KOSHTOYANTS, Kh.S., redaktor; SAMARIN, A.M., redaktor; LEBEDEV, D.M., professor, redaktor; FIGUROVSKIY, N.A., professor, redaktor; KUZNETSOV, I.V., kandidat filosofskikh nauk, redaktor; PETROVA, G.M., redaktor; AUZAN, N.P., tekhnicheskii redaktor.

[The magnet, magnetic bodies, and the great magnet the earth; a new physiology, demonstrated by many arguments and experiments. Translated from the Latin by A.I.Dovatur] O magnite, magnitnykh telakh i o bol'shom magnite-zemle; novaya fiziologiya, dokazannaya mnozhestvom argumentov i opytov. Perevod s latinskogo A.I.Dovatura, Red., stat'ia i kommentarii A.G.Kalashnikova. Moskva, Izd-vo Akademii nauk SSSR, 1956. 411 p.

(MLRA 9:6)

1.Chlen-korrespondent AN SSSR (for Delone, Koshtoyants, Samarin).
(Magnetism)

TOPCHIEV, A.V., akademik, otvetstvennyy redaktor; KAZANSKIY, B.A., akademik, zamestitel' otvetstvennogo redaktora; OPITSEROV, V.V., redaktor; KRENTSEL', B.A., kandidat tekhnicheskikh nauk, redaktor; KURASHEV, M.V., kandidat tekhnicheskikh nauk, redaktor; KARAPETIAN, Sh.A., redaktor izdatel'stva; SHCHERKIN, V.V., redaktor izdatel'stva; MAKUNI, Ye.V., tekhnicheskii redaktor

[Chemical processing of petroleum hydrocarbons; proceedings of a conference] Khimicheskaya pererabotka neftyanykh uglevodorodov; trudy soveshchaniya. Moskva, Izd-vo Akademii nauk SSSR, 1956. 654 p. (MLRA 9:12)

1. Vsesoyuznoye soveshchaniye po kompleksoy khimicheskoy pererabotke neftyanykh gasov.
(Petroleum--Refining) (Hydrocarbons)

RODIONOV, V.M., akademik, redaktor [deceased]; KAZANSKIY, B.A., akademik, redaktor; KNUNYANETS, I.L., akademik, redaktor; SHERYAKIN, M.M., redaktor; MEL'NIKOVA, N.N., professor, redaktor; TAYTS, S.Z., redaktor; SHEMASTINA, Ye.V., redaktor; KORNEYEVA, V.I., tekhnicheskij redaktor

[Reactions and methods of analysis of organic compounds] Reaktsii i metody issledovaniia organicheskikh soedinenii. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry. Vol.4. 1956. 319 p. (MLRA 9:7)

1. Chlen-korrespondent AN SSSR (for Shemyakin)
(Chemical reactions) (Isomers and isomerization)

KAZANSKIY, B. A.

USSR/ Chemistry - Hydrogenation

Card 1/1 Pub. 40 - 9/25

Authors : Kazanskiy, B. A.; Lukina, N. Ye.; Malyshov, A. I.; Altshteyn, V. T.; and
Shteyn, N. Ye.

Title : Hydrogenation of isopropenylcyclopropane in the presence of Pd black

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 36-42, Jan 1956

Abstract : Experiments showed that the hydrogenation of isopropenylcyclopropane in an alcohol solution in the presence of Pd-black at room temperature and atmospheric pressure results in the addition of two hydrogen molecules to the propene and the formation of 2-methylpentane. It was found that the hydrogenation is followed by intermediate formation of 2-methylpentene-1 and 2-methylpentene-2. Isomerization of 2-methylpentene-2 into 2-methylpentene-1 and vice versa was observed under conditions identical to those of hydrogenation. Continuous agitation with reduced Pd-black produced no effect on the isopropenylcyclopropane. Ten references: 5 Russ and USSR, 4 USA and 1 Germ. (1912-1954). Tables; graphs.

Institution : Acad. of Sc., USSR, Inst. of Organ. Chem. im. N. D. Zelinskiy

Submitted : February 15, 1955

KAZANSKIY, B. A.

Physical properties of some varieties of leucodermis

KAZANSKI, B.A.

Hydrogenation of isopropenylcyclohexane in the 1950s

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721320002-4

KAZANSKY, B. A.

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721320002-4"

KAZANSKIY, B.A.; LUKINA, M.Yu.; NAKHAPETTYAN, L.A.

Catalytic hydrogenation of isopropyl- and isopropenylcyclobutane.
Izv.AN SSSR, Otd.khim.nauk no.10:1274-1275 O '56. (MLHA 9:12)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii
nauk SSSR.
(Cyclobutane) (Hydrogenation)

KAZANSKIY, B.A.

KAZANSKIY, B. A.

Isomerization of isopropenylcyclobutane on silica gel

OK
ja
MT

KAZANSKIY, B A.

✓ Synthesis of triethylcarbinol and 1-ethyl-2-pentene from
ethylenediamine bromide and carbon dioxide

tion contained Et_3CO and 1-ethyl-2-pentene which can be
separated on SiO_2 column using H_2O .
pure alc. gave 1-ethyl-2-pentene, bp 60.2, n_D^{20} 1.4143, d_4^{20}
1.41438, n_D^{20} 1.41238, d_4^{20} 0.72053; its over-all yield was
38.5%. G. M. Kosolapov

KAZANSKIY, B.A.

1/ Synthesis of 1,4-diaminobenzene-2,5-dithiolane N. 3

Usp. V. M. Brusnikina and B. A. Kazanskiy

KAZANSKIY, B. A.

... ..

KAZANSKIY, B. A.

Amits-Skita rule and properties of stereoisomeric 1,4-
disubstituted hexanes. A. L. Liberman, T. V. Lapshin, 3

PM

KAZANSKIY, B.A.

E-1

USSR/ Organic Chemistry - Theoretical and general questions
on organic chemistry

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11593

Author : Gostunskaya I.V., Tyun'kina N.I., Kazanskiy B.A.

Inst : Academy of Sciences USSR

Title : Isomerization of Mono-Olefinic Hydrocarbons by Action of Calcium Amide

Orig Pub : Dokl. AN SSSR, 1956, 108, No 3, 473-476

Abstract : Study of isomerization of 2- and 3-methylbutene-1 (I and II) hexene-1 (III), 2,3-dimethylbutene-1 (IV), 2,3-dimethylbutene-2, 2,5-dimethylhexene-2 at 70° and 2,5-dimethylhexene-3 at 120°, by action of $\text{Ca}(\text{NH}_2)_2$. Study of isomerization products has revealed that the double bond is shifted from the end of the chain to the middle, as well as from the middle to the end, and in the mixture of isomers predominates the isomer having the greatest degree of substitution at the double bond. III is isomerized more rapidly than IV. With decreasing degree of substitution at the allyl carbon rate of isomerization increases (I is isomerized to 2-methylbutene-2 more rapidly than II). The authors assume that the reaction takes place with intermediate

Card 1/2

KHROMOV, S.I.; KONDRAT'YEV, D.A.; BALENIKOVA, Ye.S.; KAZANSKIY, B.A., akademik.

Contact transformations of 1, 1' - β dimethyldicyclohexyl in the presence of platinized carbon. Dokl. AN SSSR 109 no.1:109-112 J1-Ag '56.
(MIRA 9:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Dimethyldicyclohexyl)

KAZANSKIY, B. A.

Catalytic cyclization of n-propylbenzene into indan

KAZANSKIY, B.A.; NESMEYANOV, A.N.; PLATE, A.F.

Studies of Academician N.D.Zelinskii and his school on hydrocarbons
and organic catalysis. Uch.zap.Mosk. un. no.175:5-54 '56.
(MIRA 10:3)

(Hydrocarbons) (Catalysis)

KAZANSKIY, B. A.

STENON, Nikolay [Steno, Nicolaus]; STRATANOVSKIY, G.A. [translator];
BELOUSOV, V.V., redaktor; SHAPRANOVSKIY, I.I., professor, redaktor;
PETROVSKIY, I.G., akademik, redaktor; ANDREYEV, N.N., akademik,
redaktor; BYKOV, K.M., akademik, redaktor; KAZANSKIY, B.A., akademik,
redaktor; SHCHERBAKOV, D.I., akademik, redaktor; IUDIN, P.P., akade-
mik, redaktor; DELONE, P.N., redaktor; KOSHOTOYANTS, Kh.S., redaktor;
SAMARIN, A.M., redaktor; LEBEDEV, D.M., professor, redaktor; FIGUROV-
SKIY, N.A., professor, redaktor; KUZNETSOV, I.V., kandidat filosof-
skikh nauk, redaktor; ZAYCHIK, N.K., redaktor izdatel'stva; SMIRNOVA,
A.V., tekhnicheskiiy redaktor

[A solid body enclosed by nature within a solid. Translated from
the Latin] O tverdom, estestvenno soderzhashchemsia v tverdom.
Perevod G.A.Stratanovskogo. Redaktsiya, stat'i i primechania
V.V.Belousova, i I.I.Shefranovskogo. [Leningrad] Izd-vo Akad.nauk
SSSR, 1957. 150 p. (MLRA 10:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Belousov, Delane,
Koshtoyants, Samarin)
(Geology)

TERENT'YEV, A.P.; YANOVSKAYA, L.A.; RUKHADZE, Ye.G., redaktor;
RODIONOV, V.M., akademik, redaktor [deceased]; KAZANSKIY, B.A.,
akademik, redaktor; KNUNYANTS, I.I., akademik, redaktor;
SHEMYAKIN, M.M., redaktor; MEL' NIKOV, N.N., prof, redaktor;
LUR'YE, M.S., tekhnicheskii redaktor.

[Polarographic analysis in organic chemistry] Poliarograficheski
method v organicheskoi khimii. Moskva, Gos. nauchno - tekhn. izd-
vo khim. lit-ry, 1957. 388 p. (Reaktsii i metody issledovaniia
organicheskikh soedinenii, vol.5) (MIRA 10:10)

1.Chlen-korrespondent AN SSSR (for Shemyakin).
(Polarography) (Chemistry, Organic)

KAZANSKIY, B.A.
KUSAKOV, M.M., prof., otvetstvennyy redaktor; PLATE, A.F., prof., otvetstvennyy redaktor; NIKOLAYEVA, V.G., kand.tekhn.nauk, otvetstvennyy redaktor; TOPCHIEV, A.V., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; SERGIYENKO, S.R., prof., redaktor; NEKRASOV, A.S., redaktor izdatel'stva; LOKTEV, S.M., redaktor izdatel'stva; NOVICHKOVA, N.D., tekhnicheskiiy redaktor.

[Composition and properties of petroleums and gasoline-kerosene fractions; a collection of papers on the study of the composition of petroleums and petroleum products] Sostav i svoistva neftei i benzino-kerosinovykh fraktsii; sbornik rabot po izucheniiu sostava i svoistv neftei i nefteproduktov. Moskva, Izd-vo Akad.nauk SSSR, 1957. 518 p. (MIRA 10:11)

1. Akademiya nauk SSSR. Institut nefti.
(Petroleum)

KAZANSKIY, B. A.
KASANSKIY, B.

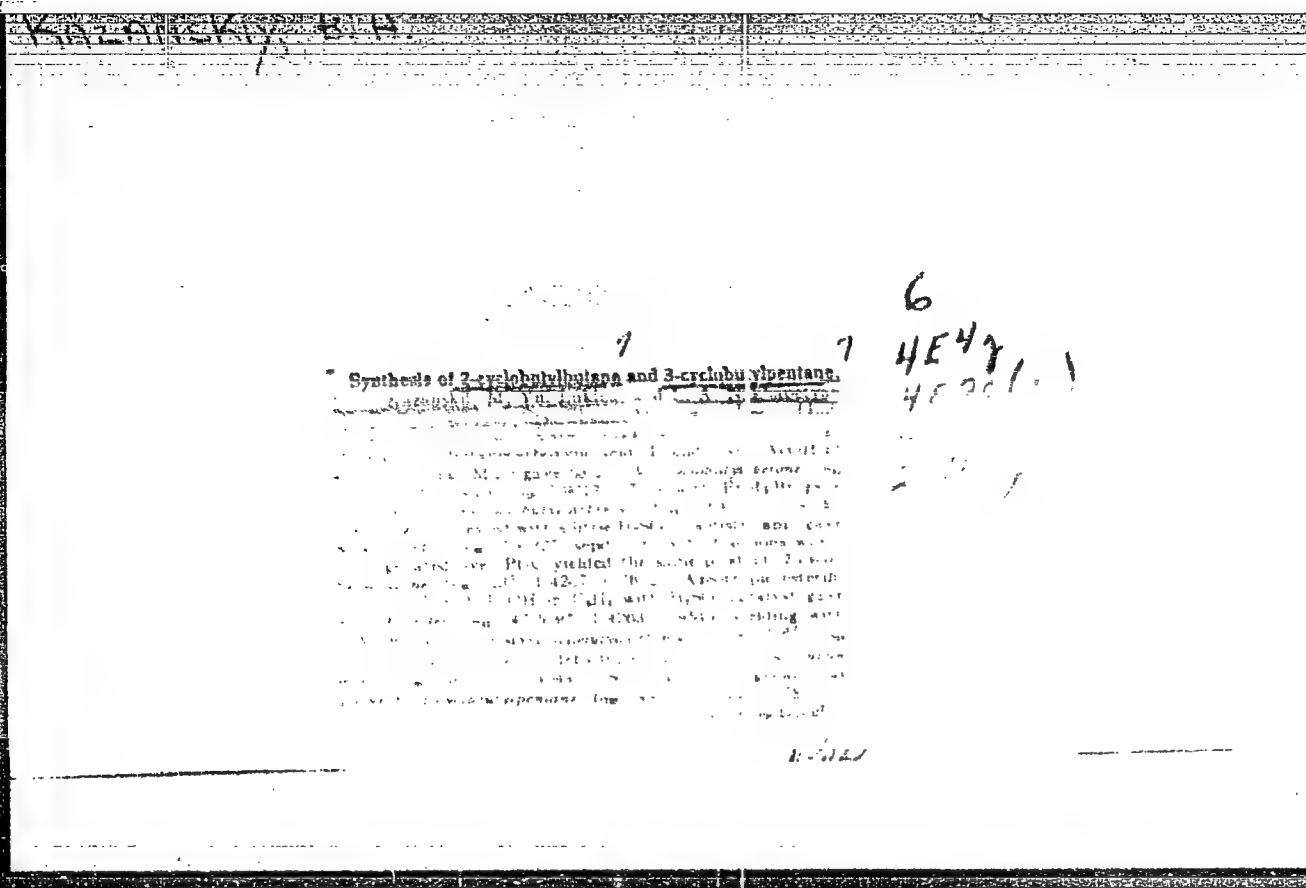
AS USSR

"Les transformations catalytiques des hydrocarbures cyclopropaniques,"
paper submitted at 16th International Congress of Pure and Applied Chemistry,
Paris, 18-24 July 1957

MAZANSKIY, P. A.; akademik; LIBERMAN, A.L.; LUKINA, M.Yu.; GOSTUNSKAYA, I.V.

Catalytic conversion of hydrocarbons. Khim. nauka i prom. 2 no.2:
172-180 '57. (MLRA 10:6)

(Hydrocarbons)



Synthesis of 2-cyclohexylbutane and 3-cyclohexylpentane

1. Synthesis of 2-cyclohexylbutane
A solution of 10 g (0.05 mole) of 2-bromocyclohexane in 100 ml of dry ether was added to a solution of 10 g (0.05 mole) of sodium metal in 100 ml of dry ether. The mixture was stirred for 2 hours at room temperature. The solution was then poured into 100 ml of water and extracted with 100 ml of ether. The ether extract was dried over anhydrous calcium chloride and then distilled. The yield of 2-cyclohexylbutane was 8.5 g (85%).
2. Synthesis of 3-cyclohexylpentane
A solution of 10 g (0.05 mole) of 3-bromocyclohexane in 100 ml of dry ether was added to a solution of 10 g (0.05 mole) of sodium metal in 100 ml of dry ether. The mixture was stirred for 2 hours at room temperature. The solution was then poured into 100 ml of water and extracted with 100 ml of ether. The ether extract was dried over anhydrous calcium chloride and then distilled. The yield of 3-cyclohexylpentane was 8.5 g (85%).

1-11-77

Kazanskiy B. A.
 AUTHORS: Kazanskiy, B. A., Sterligov, O. D.,
 Belen'kaya, A. P., Kondrat'yeva, G. Ya.,
 Pavlova, P. S.

62-11-20/29

TITLE: Determination of the Unsaturation of Isopentane-Isoprene-
 Isoamylene Mixtures According to Bromometric Methods.
 (Opredeleniye nepredel'nosti izopentan-izopren-
 izoamilenovykh smesey brommetricheskimi metodami).

PERIODICAL: Izvestiya AN SSSR, Otdeleniye Khimicheskikh Nauk, 1957,
 Nr 11. pp. 1399-1400 (USSR)

ABSTRACT: Here a relative evaluation of the exactness of the methods
 of bromometrical determination of the unsaturation and the
 selection of the most useful method for the analysis of the
 isopentane-dehydration catalysates is brought. Examining
 the bromometric methods of K. W. Rosenmund (reference 1),
 G. D. Gal'pern (reference 2) and Virabyants with artificial
 mixtures showed that in dependence of the composition of the
 isopentane-isoprene-isoamylene mixtures the exactness of the
 determination of the total unsaturation according to the
 methods of Rosenmund and Gal'pern can vary absolutely from
 1 to 3 %. When introducing correcting coefficients the

Card 1/2

Card 2/2

Kazanskiy B. A.
 AUTHORS: Kazanskiy, B. A., Lukina, M. Yu.,
 Sal'nikova, L. G.

62-11-21/29

TITLE: Catalytic Hydrogenation of the Methylcyclopropylketone
 (Kataliticheskoye gidrirovaniye metiltsiklopropilketona).

PERIODICAL: Izvestiya AN SSSR, Otdeleniye Khimicheskikh Nauk, 1957,
 Nr 11, pp. 1401-1403 (USSR)

ABSTRACT: Here under easy conditions the catalytic hydrogenation of
 the methylcyclopropylketone, a compound, in which the
 three-membered ring is linked to the carbonyl group, is
 investigated. It is shown that at room temperature the
 association of the hydrogen with the methylcyclopropyl-
 ketone takes place very slowly in the alcohol-medium under
 presence of platinum black and that it practically stops
 after the connection of ~1.3 mols hydrogen, although a part
 of the ketone remains unchanged. The hydrogenation products
 were: methylcyclopropylcarbinol and pentanol-2. The
 formation of these carbinols can be explained by the
 binding of the hydrogen to the ketone in all possible
 directions of the linked system. The hydrogenation with
 palladium black was different. The reaction took place much

Card 1/2

KHROMOV, S.I.; RADZHABLI-SEIDOVA, N.A.; TRESHCHOVA, Ye.G. ~~Y. KAZANSKIY~~, B.A.

Contact conversions of 1-methyl-1-phenylcyclohexane and phenylcyclohexane in the presence of aluminosilicate catalysts. Vest. Mosk. un. Ser. mat., mekh., astron., fiz. khim., 12 no.5:171-176 '57. (MIRA 11:9)

1. Kafedra khimii nefti Moskovskogo gosudarstvennogo universiteta.
(Cyclohexane) (Catalysts)

KHROMOV, S.I.; BALENKOVA, Ye.S.; KAZANSKIY, B.A.

Catalytic dehydrogenation conditions for transformations of
1,1-dialkylcyclohexanes with five and six membered rings. Vest. Mosk.
un. Ser. mat., mekh., astron. fiz., khim. 12 no. 6:225-236 '57.
(MIRA 11:10)

1. Kafedra khimii nefti Moskovskogo gosudarstvennogo universiteta.
(Cyclic compounds)
(Dehydrogenation)

KALANSKIY, B. A.

Localization of monodentate hydrocarbons in the

M. Kalanskiy

949

KAZANSKIY, B.A.

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topo-chemistry, Catalysis.

B-9

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7207.

Author : I.V.Gostunskaya, M.I. Rozhkova, B.A. Kazanskiy.

Inst : Academy of Sciences of USSR. *Moscow State Univ.*

Title : Reduction of Monoolefin Hydrocarbons by Alkali Metals in Liquid Ammonia Medium.

Orig Pub; Dokl. AN SSSR, 1957, 114, No 3, 545-548.

Abstract: The dependence of the reduction rate of pentene-1, hexene-1, heptene-1, octene-1, nonene-1, decene-1, octene-2 and heptene-3 on the olefin nature and structure and the metal nature was investigated in the medium of liquid NH_3 in presence of CH_3OH and $\text{C}_2\text{H}_5\text{OH}$. The yield of saturated hydrocarbons drops with the rise of the olefin molecular weight. β and γ -olefins are not reduced under these conditions. The comparative metal activity

Card : 1/2

-10-

AUTHORS:

Lukina, M. Yu., Zotova, S. V., Kazanskiy, B. A. 20-114-4-31/63
Member, Academy of Sciences, USSR

TITLE:

Catalytic Transformations of 1,1,2-Trimethylcyclopropane in
the Presence of Palladium Coated or Activated Charcoal (Ka-
taliticheskiye prevrashcheniya 1,1,2-trimetiltsiklopropana
v prisutstviy palladirovannogo uglya i aktivirovannogo uglya)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 792-795
(USSR)

ABSTRACT:

It has been pointed out several times that cyclopropane and its
homologues are capable of undergoing an isomerization into ole-
fines in the presence of some catalysts (aluminumoxide, silica
gel, platinum black). The hydrocarbons obtained were not in all
cases identified with sufficient clearness. Furthermore, oper-
ative data of the reactions are often contradictory. The authors
were determined to find out whether the palladium-coated and
planished charcoal is capable of effecting the isomerization of
a 3-part cycle. The object of the examination was 1,1,2-tri-
methylcyclopropane. The reaction took place in a nitrogen current
at 220°C. It was found that the palladium coated charcoal under
these conditions causes the isomerization of the said substance
into mixture of olefines. It proceeds with about 55%. Above

Card 1/3

Catalytic Transformations of 1,1,2-Trimethylcyclopropane in 20-114-4-31/63
the Presence of Palladium Coated or Activated Charcoal

all the linkage between the strongest and weakest hydrogenated
carbon atoms of the ring is broken up; to a lower degree
another linkage which lies close to the quaternary carbon
atom. The linkage between the two strongest hydrogenated carbon
atoms, which is broken up in hydrolysis, remains unaffected
in isomerization. The diagram drawn and the comparison with
the reaction of the hydrolysis of 1,1,2-trimethyl cyclopropane
in the presence of the platinum coated charcoal enabled the
authors to draw the following conclusions: 1. In the case of
the catalytic linking of hydrogen to the alkylcyclopropanes
two processes may be followed: hydrogenolysis of the 3-part
cycle with a break-up of the ring, and the isomerization re-
action into olefines with a subsequent hydrogenation. 2. The
hydrolysis of the alkylcyclopropanes does not undergo any
intermediate isomerization into olefines; in the opposite case
the final products of both reactions would be identical. 3. The
activated charcoal can not only catalyse the isomerization re-
action of the alkylcyclopropanes, but also the hydrogenation
reaction of the thus produced olefine-hydrocarbons. The ex-
perimental part gives methods, yields, constants, etc. of the

Card 2/3

AUTHOR
TITLE

PERIODICAL
ABSTRACT

KAZANSKIY, B.A., Member of the Academy, LUKINA, M.Yu., and SAL'NIKOVA, L. 20-2-29/62
The Hydration of Vinylcyclopropane and 1-Methyl-1-Isohexanyl Cyclopropane in the Presence of Platinum and Palladium
(Gidrirovaniye viniltsiklopropa i 1-metil-1-izogekseniltsiklopropana v prisutstvii platiny i palladiya. kussian)
Doklady Akademii Nauk SSSR, 1957, Vol 115, Nr 2, pp 301 - 403 (U.S.S.R.)

It was recently found that isopropenylcyclopropane at room temperature in the presence of palladium black absorbs 2 hydrogen molecules and forms 2-methylpentane. The reaction takes place with an intermediate formation of 2-methylpentane-1 and -2. A scheme is given. Isopropylcyclopropane does not form at all under these conditions. This peculiar behavior of isopropenyl cyclopropane gives rise to the supposition that the double bond existing in the side-chain weakens the stability of the C-C bonds of the three-member ring which lie near the substituent against their reactions of splitting and addition to hydrogen. This apparently takes place thanks to a peculiar conjugation between the cyclopropane ring and the double bond. The hydration of the mentioned substance in the presence of platinum black takes place in a different manner: 1,3 mol. of hydrogen are absorbed and a mixture of 70 % isopropylcyclopropane and 30 % 2-methylpentane develops. In this case, therefore, the splitting of the three-member cycle under addition of hydrogen according to the palladium scheme takes place slower than

Card 1/4

20-2-29/62

The Hydration of Vinylcyclopropane and 1-Methyl-1-Isohexanyl Cyclopropane in the Presence of Platinum and Palladium

the addition of hydrogen to the double bond with retention of the cyclopropane ring. In the first reaction 0,6 mol., for the second one 0,7 mol. of hydrogen are consumed. The present work studied the addition of hydrogen, in the presence of the blacks of both metals, to two other hydrocarbons of the cyclopropane series which contain a double bond in the side chain (see title). With palladium black (at +2°C) vinylcyclopropane readily absorbs 2 hydrogen molecules and forms n-pentane. That means that here the three-member ring, under addition of hydrogen, is split just as easily as in the case of isopropenyl cyclopropane, the double bond of the side chain being hydrated in this connection. If the hydration is interrupted and only 1 H-molecule is permitted to add, a complex mixture develops which is not yet thoroughly investigated. At room temperature with platinum black or at 100 °C with a copper-chromium catalyst and up to 130 at. superpressure 1-methyl-1-isohexanyl-cyclopropane is converted to 1-methyl-1-isohexylcyclopropane which was hitherto not described in publications. In the presence of palladium black 1-methyl-1-isohexanyl-cyclopropane absorbs about 1.6 mol. of hydrogen and is converted, as far as can be judged from the hydra-

Card 2/4

20-2-29/62

The Hydration of Vinylcyclopropane and 1-Methyl-1-Isohexanyl Cyclopropane in the Presence of Platinum and Palladium

tion products, to a mixture of 1-methyl-1-isohexylcyclopropane and 2,6-dimethyloctane. The following explanation is given for that: Part of the added hydrogen is consumed in the hydration of the double bond in the side chain; the rest is used for the addition to the isomeric hydrocarbon in which the double bond, under the influence of palladium black, had shifted into a conjugate position with the cyclopropane ring. 1-methyl-isohexanyl-cyclopropane, produced due to isomerization, with a conjugate position of the double bond in relation to the cyclopropane ring apparently should behave analogously to vinylcyclopropane and isopropenylcyclopropane in the presence of palladium and hydrogen. Namely it should absorb 2 hydrogen molecules and be converted to 2,6-dimethyloctane. In the presence of platinum black the double bond does not shift. Therefore the hydration result is only 1-methyl-1-isohexylcyclopropane. At 180°C this latter is converted to 2,2,6-trimethylheptane in the gas phase and in the presence of platinum-plated charcoal under addition of hydrogen. Therefore the hydrogenolysis of the 3-member ring here occurs in the same manner as in the case of other alkylcyclopropanes, namely under a splitting of the C—C bond lying opposite to the substituent. Experimental part with the usual data. (3 tables,

Card 3/4

20-2-29/62

The Hydration of Vinylcyclopropane and 1-Methyl-1-Isohexanyl Cyclopropane in the Presence of Platinum and Palladium

6 Slavic references).

ASSOCIATION
PRESENTED BY
SUBMITTED
AVAILABLE

Not given

21.5.1957

Library of Congress

Card 4/4

Dealkylation of Alkyl-Aromatic Hydrocarbons and Their Derivatives 20-1-23/44
in the Presence of an Aluminum-Silicate-Catalyst.

marked electron-giving or electron-receiving properties and which is correspondingly orientated toward the first substituent. When the dealkylation actually proceeds according to an ionic mechanism, a connection is to be assumed to exist between the above-mentioned change and the modification of the electronic density of the benzene nucleus, as a whole, and with the electronic redistribution according to the nature and the orientation of the second substituent. The authors considered it timely to carry out a more systematic investigation of several alkylaromatic hydrocarbons, together with derivatives, with one and the same catalyst and under comparable conditions with regard to their speed of dealkylation. Table 1 shows the eleven substances selected for this purpose. The quartz tubes with one of these substances respectively were exposed to a temperature of from 370 to 490°C in an electric furnace with a thermoregulator. The test results were worked on according to the equation by Frost for monomolecular, heterogeneous reactions in a passage system, when these reactions are hindered by transformation products. The apparent constants of reaction speed were calculated and the apparent activation energies were determined from them on a graphical way (table 2). In the calculation of the energies the very high value of the ethyl-benzene-dealkylation is sur-

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presence of an Aluminum-Silicate Catalyst. 20-1-23/44

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721320002-4

prising. This is apparently due to the fact that the reaction not only took place as a catalytic but as a non-catalytic process. The structure of the alkyl group exerts a strong influence on the speed of dealkylation of monoalkylbenzenes which have a C_3H_7 , C_6H_5 and C_4H_9 , C_6H_5 structure. The substituents CH_3 and Cl , which themselves do not participate in the dealkylation reaction, exert a visible influence on the value of the activation energy. According to the authors the obtained results are a proof more in favor of the ionic mechanism of the catalytic dealkylation of alkylbenzene and some of their derivatives. There are 2 tables and 10 references, 6 of which are Slavic.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova).

SUBMITTED: May 21, 1957.

AVAILABLE: Library of Congress.

Card 3/3

KAZANSKIY, B. A.

20-5-20/48

AUTHORS: Lukina, M. Yu. , Zotova, S. V. and Kazanskiy, B. A. , Academician

Dealkylation of Ethylcyclobutane and 1,1,2-Trimethylcyclopropane

20-5-20/48

Hydrogenation of Ethylcyclobutane and 1,1,2-Trimethylcyclopropane in Presence of Palladium Charcoal

place at all. It was proved already earlier by Kazanskiy and his assistants that palladium charcoal cannot catalyze the hydrogenolysis of the cyclopentane (reference 6) and its homologues (reference 7). The data for alkylcyclobutanes lack. Cyclopropane was more able to bind hydrogen to palladium on pumice at higher temperatures than to platinum. The results obtained in present paper (and in the title) are easily to be compared to those on platinized coal. The experiments have shown that ethylcyclobutane can be hydrogenolyzed on palladium charcoal at a somewhat higher temperature than on platinized charcoal. Here also the two possible bindings of the 4-part cycle were cracked, however, a branched isomer was produced in a somewhat greater quantity (60%). Considerable differences from the platinized charcoal were found in the case of 1,1,2-trimethylcyclopropane. It was proved that at 100 and 120° both possible reactions of hydration took place: hydrogenolysis as well as isomerization with a subsequent hydration. Thus the catalyzate contained all 3 possible products of the fission of the 3-part cycle. At 220° the secondary reaction took place to a greater extent, and the mixture of 2,3-dimethylbutane and 2-methylpentane amounted to already 40 % of the total mixture. The obtained results show

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20-3-20/52

AUTHORS: Liberman, A. L. , Vasina, T. V., and Kazanskiy, B. A., Academician

TITLE: Cyclization of 3-Ethylpentane to Ethylcyclopentane (Tsiklizatsiya 3-etilpentana v etiltsiklopentan)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 3, pp. 430 - 432 (USSR)

ABSTRACT: From works (references 1, 2, 3) recently published by the authors it became known that the paraffinic hydrocarbons may be cyclized in presence of platinum during the formation of a 5-membered ring. The direct possibility of formation of cyclopentanes from paraffins was reliably proved. For the purpose of comparison the authors intended to investigate another hydrocarbon, which was not so much branched out as isooctane, and the cyclization product of which, however, should have a boiling point sufficiently distant from the initial hydrocarbon. By means of that the individual isolation of the cyclization product should be rendered possible. For that purpose 3-ethylpentane was chosen, having only one side chain and yielding to an unique reaction product by cyclization: Ethylcyclopentane. Because the difference of the boiling points amounts to 10°, the separation of both substances does not show any difficulty. The initial substance was filtered through the catalyst hap-

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Cyclization of 3-Ethylpentane to Ethylcyclopentane

20-3-20/52

pening but once at 310° and at a volume velocity of 0,19 - 0,22 per hour. The analysis of the 5 parts of the "catalyzate" showed a content of from 1,2 - 1,9 % of olefins and 0,4 - 0,7 % of aromatic hydrocarbons. After removing of these reaction products by means of the chromatography, the ethylcyclopentane content (12,5 - 5,7 %) decreasing from experiment to experiment, could be stated according to the constants in the "catalyzate". By means of the fractionation of the connected, desaromatized 2 "catalyzate" parts the individual ethylcyclopentane could be isolated (the fractionating curve figure 1). The constants of the fraction V of this fractionating practically do not differ from the constants of the ethylcyclopentane. Follows an experimental part with usual data. There are 1 figure, 2 tables, and 5 references, 4 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry imeni N. D. Zelinskiy AN USSR (Institut organicheskoy khimii im. N. L. Zelinskogo Akademii nauk SSSR)

SUBMITTED: July 13, 1957

AVAILABLE: Library of Congress

Card 2/2

SEKCIYENKO, S.R., prof., otvetstvennyy red.; TOPCHIEV, A.V., akademik, red.; KAZANSKIY, B.A., akademik, red.; FEDOROV, V.S., kand.tekhn.nauk, red.; KUSAKOV, M.M., prof., red.; PLATE, A.P., prof., red.; NIKOLAYEVA, V.G., kand.tekhn.nauk, red.; NEKRASOV, A.S., red. izd-va; PAVLOVSKIY, A.A., tekhn.red.

[Composition and properties of the high-molecular part of petroleum; a collection of papers on the composition and properties of petroleum and petroleum products] Sostav i svoystva vysokomolekuliarnoi chasti nefi; sbornik rabot po izucheniiu sostava i svoystv nefei i nefteproduktov. Moskva, Izd-vo Akad. nauk SSSR, 1958. 369 p. (MIRA 11:4)

1. Akademiya nauk SSSR. Institut nefi.
(Petroleum--Analysis)

KAZANSKIY, B. A.

AUTHORS: Kazanskiy, B. A., Lukina, M. Yu., Safonova, I.L., 62-1-19/29

TITLE: Hydrogenation of Phenylcyclopropane in Presence of Palladium- and Platinum Black (Gidrirovaniye feniltsiklopropana v prisutstvi palladiyevoy i platinovoy cherni)

PERIODICAL: Izvestiya AN SSSR, Otdeleniye Khimicheskikh Nauk, 1958
Nr 1, pp. 102 - 104 (USSR)

ABSTRACT: Formerly it was shown by the authors that systems which contain a three-membered ring and a double binding (C-C or C=O) in combined state can be easily hydrolyzed by the aperture of the cycle in cold (references 1-4). In present paper the authors describe the hydration of the phenylcyclopropane in which the three-membered cycle is connected with the aromatic system of the double bindings. It was found that in the presence of palladium hydrogen combines with phenylcyclopropane with a velocity of 30 ml/min. The obtained catalysate boils in the interval of 0,1° and was a separate substance (according to the constants). (tables 1 and 2). Even with great quantities of the catalyst the hydration took place 90 times slower than with palladium. It was assumed that the catalyst contained propylcyclohexane (perhaps also cyclohexylcyclopropane) which the constants of which have

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Hydrogenation of Phenylcyclopropane in Presence of Palladium- and
Platinum Black

62-1-19/29

not yet been described in literature. There are 1 figure, 2
tables, 7 references, 5 of which are Slavic.

ASSOCIATION: Institute of Organic Chemistry imeni N. D. Zelinskiy, AS USSR
(Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR)

SUBMITTED: July 12, 1957

AVAILABLE: Library of Congress

1. Phenylcyclopropane-Hydrogenation
2. Palladium catalyst-Applications
3. Platinum oxide catalyst-Applications

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KAZANSKIY, B.A.

AUTHORS: Shatenshteyn, A. I., Dubinskiy, Yu. G., 62-1-20/29
Yakovleva, E. A., Gostunskaya, I. V., Kazanskiy, B. A.

TITLE: Catalytic Reactions on the Surface of Solid Amides of Calcium and Potassium (O katalicheskikh reaktsiyakh na poverkhnosti tverdykh amidov kal'tsiya i kaliya)

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 1, pp. 104-106 (USSR)

ABSTRACT: In the investigation of the deuterioexchange in alkenes, catalyzable by means of the solution of potassium amide their isomerization (in the dislocation of the double compound) was found. The isomerization also catalyzes the solid amide of calcium in case that the solvent is not present. The isomerization of the alkenes belongs to the few examples of reactions which occur in alkaline catalysis. It is assumed that the isomerization leads through the stage of carbonion formation. There is no doubt a common characteristic of the reasons for isomerization reactions in the deuterioexchange and their belonging to the class of basic acid reactions. They are catalyzed by the ions of the amide in ammonia solutions and the solid amides under heterogeneous conditions.

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There are 1 figure, and 11 references, 8 of which are Slavic.

Catalytic Reactions on the Surface of Solid Amides of Calcium and Potassium 62-1-20/29

ASSOCIATION: Physicochemical Institute imeni L. Ya. Karpov, and State University imeni M. V. Lomonosov (Fiziko-khimicheskiy institut imeni L. Ya. Karpova i Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova)

SUBMITTED: July 12, 1957

AVAILABLE: Library of Congress

1. Amides-Catalytic properties

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5(3)

AUTHORS:

Kazanskiy, B.A., Gostunskaya, I.V.
Popova, N.I. and Dobroserdova, N.B.

SOV/55-58-3-25/30

TITLE:

Catalytic Hydrogenation of Diene Hydrocarbons With Conjugate System of Double Bonds (Kataliticheskoye gidrirovaniye dienyovykh uglevodorodov s sopryazhennoy sistemoy dvoynykh svyazey)

PERIODICAL:

Vestnik Moskovskogo universiteta, Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1958, Nr 3, pp 207-216 (USSR)

ABSTRACT:

The present paper contains no new results but gives a survey of the western and eastern investigations during the last 40-50 years concerning the catalytic hydrogenation of diene with conjugate system of double bonds. Among the eastern publications there are mentioned the papers of S.V. Lebedev, and then numerous present investigations of the authors, further more papers of R.Ya. Levina, V.R. Skvarchenko, N.I. Tyun'kina, N.D. Zelinskiy, M.Yu. Lukina, and A.I. Malyshev. There are 3 tables, and 36 references, 22 of which are Soviet, 6 American, 5 German, 2 English, and 1 French.

ASSOCIATION:

SUBMITTED:

Kafedra khimii nefi (Chair of Petroleum Chemistry)
July 1, 1957

Card 1/1

AUTHORS: Lukina, M. Yu., Zotova, S. V., Kazanskiy, B. A. 62-58-3-7/30

TITLE: The Isomerization of 1,1,2-Trimethylcyclopropane in the Presence of Palladium- and Platinum-Charcoal (Izomerizatsiya 1,1,2-trimetiltsiklopropana v prisutstvii palladirovannogo i platinirovannogo uglya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 3, pp. 300-304 (USSR)

ABSTRACT: Dealing with the investigation of the hydrogenolysis of alkylcyclopropanes in the presence of platinum- and palladium-catalysts it was of interest for the authors to investigate the isomerizing action of the catalysts upon the three-membered carbon cycle. The object of investigation in this case was 1,1,2-dimethylcyclopropane. The above-mentioned palladium- and platinum-charcoal served as catalysts. The investigation performed in this manner showed that palladium-plated and nonpalladium-plated charcoal at a temperature above 200° C causes a marked isomerization of 1,1,2-dimethylcyclopropane to olefins. This isomerization occurs more actively on a rise of temperature to 250° C and its depth remains constant on a further rise of

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The Isomerization of 1,1,2-Trimethylcyclopropane in the Presence of Palladium- and Platinum-Charcoal 62-58-3-7/30

temperature to 280° C. An analysis of the product of catalysis showed that the isomerization in the presence of both catalysts approximately occurs with a 60% yield. On that occasion the linkage between the carbon atoms of the cycle which were hydrogenized least and those which were hydrogenized most strongly breaks, which is in agreement with experience. But the authors also could determine another direction of the occurring tear at the expense of the bond at the tertiary carbon atom. A scheme on the reaction of the isomerization is given on page 301. There are 4 tables and 10 references, 8 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute for Organic Chemistry imeni N. D. Zelinskiy, AS USSR)

SUBMITTED: October 19, 1956

Card 2/2

AUTHORS: Kazanskiy, B. A., Lukina, E. Yu., SOV/62-58-10-24/25
Safonova, I. L., Aleksanyan, V. T., Sterin, Kh. Ye.

TITLE: Letter to the Editor (Pis'ma redaktoru)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniya khimicheskikh nauk,
1958, Nr 10, pp 1230 - 1280 (USSR)

ABSTRACT: The authors succeeded for the first time to distribute
1,2-diphenyl cyclopropane and 1-phenyl-2-cyclopropyl
cyclopropane to stereoisomers. The properties were:
1,2-diphenyl cyclopropane (cis-form); boiling point 131,
6-131, 7°, (4,8mm); melting point 36,7°; n_D^{20} 1,5887;
 d_4^{20} 1,0290. The trans-form: Boiling point 144,1-144,2°
(5,2 mm); melting point 15,3°; n_D^{20} 1,5997; d_4^{20} 1,0346;
1-phenyl-2-cyclopropyl cyclopropane: cis-form:boiling
point 100,2-100,5 (11 mm); n_D^{20} 1,5330; d_4^{20} 0,9574; trans-
form: Boiling point 111,3-111,5° (13,8 mm); n_D^{20} 1,5371;
 d_4^{20} 0,9585. The spectra of the combination dispersion

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Letter to the Editor

SOV/62-58-10-24/25

of both stereoisomer pairs were investigated and a considerable increase of the integral intensities of the characteristic bands of the benzene ring were found. This effect proves the presence of a considerable linkage of the phenyl nuclei with the 5-membered nucleus. This linkage is less intense in the spectra of the isomers with low boiling point. The authors explain this phenomenon by the presence of steric hinderances that disturb the situation favorable to the phenyl nuclei. There are 2 references, which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR i Komissiya po spektroskopii pri Otdelenii fiziko-matematicheskikh nauk Akademii nauk SSSR (Institute of Organic Chemistry imeni N.D. Zelinskiy AS USSR and the Commission for Spectroscopy at the Department of Physical Mathematical Sciences AS USSR)

SUBMITTED: July 19, 1958
Card 2/2

KAZANSKIY, B. A.

AUTHORS: Kazanskiy, B. A., Sterligov, O. D., 75-1-23/26
Belen'kaya, A. P., Kondrat'yeva, G. Ya., Pavlova, P. S.

TITLE: Bromometric Methods of Determining Unsaturated Hydrocarbons in Isopentane-Isoprene-Isoamylene Mixtures
(Opredeleniye nepredel'nosti izopentan - izopren - izoamilenovykh smesey bromometricheskimi metodami)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol 13, Nr 1, pp 134-141, (USSR)

ABSTRACT: In the catalytic dehydrogenation of isopentane a mixture of 5 components forms - the initial product, 3 isopentenenes and isoprene. The quantitative relation of the components depends on the reaction conditions. In the present paper the reliability of the three bromimetric methods - according to Rosenmund (Reference 3), Gal'pern (Reference 5) and Vyrabiants (Reference 6) is examined. This control was investigated in pure C₅-hydrocarbons and also in various artificial mixtures of isopentane with isopentenenes and isoprene which differed in the number of components and also in their concentration. It became evident that the method according to Vyrabiants is not

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75-1-23/26

Bromometric Methods of Determining Unsaturated Hydrocarbons in Isopentane-Isoprene-Isoamylene Mixtures

suitable for an analysis of such mixtures, because the error assumes different values and attains up to 7 - 8 % (absolute). The results obtained according to Rosenmund and Gal'pern confirm the fact that the accuracy of the determination of double bonds depends on the structure of the hydrocarbons and on the composition of the mixture: 2-methyl-butene(2) and 3-methyl-butene(1) without difficulty absorb 1 bromine molecule on bromination. 2-methyl-butene(1) and isoprene consume more than 1 bromine molecule and therefore yield too high results, relative to a double bond, in the determination according to Rosenmund and Gal'pern. The analysis of mixtures with 3 or 4 components, but without isoprene, showed an average absolute error of the determination of the olefines of ± 1 %. On addition of isoprene to the mixtures with 3 components the absolute error increases to ± 3 %. The analysis of mixtures with 5 components showed that the absolute error in the case of an isoprene content up to 20 % in the method according to Rosenmund on the average amounts to ± 3 % and according to the method by Gal'pern -2 %. As the average error in the

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Bromometric Methods of Determining Unsaturated Hydrocarbons in Isopentane-Isoprene-Isoamylene Mixtures

determination of the total number of double bonds in mixtures of 5 components according to both methods has a systematic nature, it can be taken into account by the introduction of a corresponding coefficient (in the case of an isoprene content up to 20 %). It was shown that the values for the total number of double bonds which were once determined according to Rosenmund and once according to Callern practically coincide after the introduction of a correction coefficient. As the method of bromination only makes possible a sum determination for alkenes and dienes, the content of monoolefines can only be determined from the difference between the total number of double bonds and the content of dienes. In the present case an appropriate correction which takes into account the content of isoprene must therefore be applied to the bromimetric results for determining the content of isopentenenes. For the determination of isoprene the photometric method according to Robey and Wiese (Reference 17) was employed which is well applicable in the presence of monoolefines, but also of some dienes. The average

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Bromometric Method of Determining Unsaturated Hydrocarbons in
Isopentane-Isoprene-Isoamylene Mixtures

error of this determination is less than 1 % (absolute). Determination takes 1 1/2 hours, which time can be shortened in series determinations to 20 minutes for one determination. When the concentration of isoprene in isopentane-isoprene-isopentene mixtures has been determined in this manner, the content of isopentenenes (P) can be calculated according to the formula $P = a \cdot P' - b$. P is the found total number of double bonds in the mixture, b is the concentration of isoprene in the mixture and a is the correction coefficient. In the method according to Rosenmund $a = 0,96$ and in the method according to Gal'pern $a = 1,04$. All performed tests are exactly described. During the elaboration of this method a short article by Timofeyeva and collaborators (Reference 18) on the same problem was published. In this article a correction coefficient is introduced in the final formula of the calculation which only takes into account the error produced by the inexact bromination of isoprene.

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Bromometric Methods of Determining Unsaturated Hydrocarbons in
Isopentane-Isoprene-Isoamylene Mixtures 75-1-23/26

There are 1 figure, 5 tables, and 21 references, 15 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry im. N.D. Zelinskiy, AS USSR,
Moscow (Institut organicheskoy khimii im.
N.D.Zelinskogo AN SSSR, Moskva)

SUBMITTED: April 8, 1957

AVAILABLE: Library of Congress

1. Hydrocarbons - Determination

Card 5/5

KAZANSKIY, B.A.; GOSTUMSKAYA, I.V.; POPOVA, N.I.; DOBROSERDOVA, N.B.

Catalytic hydrogenation of diene hydrocarbons with conjugated systems of double bonds. Vest.Mosk.un.Ser.mat.,mekh.,astron., fiz.khim. 13 no.3:207-215 '58. (MIRA 12:4)

1. Kafedra khimii nefti Moskovskogo universiteta.
(Hydrogenation) (Hydrocarbons)

SOV/74-27-10-1/4

AUTHORS: Topchiyev, A. V., Kazanskiy, B. A., Musayev, I. A., Gal'pern, G. D., Kusakov, M. M., Plate, A. F. (Moscow)

TITLE: Investigation of the Composition of the Light Fractions of Soviet ~~Crudes~~ (Issledovaniye sostava legkikh fraktsiy sovetskikh neftey)

PERIODICAL: Uspekhi khimii, 1958, Vol 27, Nr 10, pp 1177-1197 (USSR)

ABSTRACT: This paper gives a chronological report on the fundamental publications on the investigation of the composition of the light fractions of the Soviet mineral oils which have hitherto been made. In this connection special attention is paid to those publications which are edited by N. D. Zelinskiy, his collaborators and students (Refs 1-50). As may be seen from the present paper the current investigations of the mineral oil fractions until the years 1937, 1939 were carried out mainly in connection with a chemical characterization of the light benzoin and benzene ligroin fractions of mineral oil. Only in the 1940's methods were elaborated for the intensification of the individual investigation of the light fractions of the Soviet mineral oils. At the beginning of this paper reports are made on the first

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Investigation of the Composition of the Light Fractions of Soviet
Crudes

work carried out in 1881-83 (Bel'shteyn and Kurbatov). The diverse research institutes of mineralogy which have been established are chronologically mentioned (e. g.: 1924: the first central (Gosudarstvennyy Issledovatel'skiy neftyanoy Institut) State Research Institute of **Petroleum** in Moscow); 1934: Institut goryuchikh iskopayemykh AN SSSR (Institute of Combustible Minerals AS USSR), diverse chemo-technical laboratories of the GINI (State Research Institute of **Petroleum**) as well as diverse research institutes in the Republics of the **Union: Azerbaydzhanskaya SSR, Uzbekskaya SSR, Turkmeneskaya SSR**, and others. After World War II methods of group analysis on a higher level were elaborated for the investigation of the petroleum naphtha fractions (with a further differentiation of the hydrocarbon subgroups). It was necessary to investigate in detail the composition of the hydrocarbons of the light mineral oil fractions because of the rapid development of air plane and automobile motor construction in the USSR. Due to this fact the demands concerning the quality of the motor fuel as well as of the crude oil changed. Especially in 1955 intensive investigations of the individual composition of the hydrocarbons of gasoline produced by cracking were carried out by using the chromatographic distribution of

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Investigation of the Composition of the Light Fractions of
Soviet Crudes

adsorption, the catalytic analytic hydrogenation and dehydrogenation as well as spectrum analysis by means of combined dispersion of light (Refs 108-160). In conclusion the authors are of the opinion that mere geological and geochemical factors are not sufficient for the production of experimentally founded theories on the formation and the change of **petroleum** under the conditions of migration. A great number of important data are necessary for the solution of the problem of the formation of **petroleum**, namely the nature, the concentration and the composition of the hydrocarbon components (or the non-hydrocarbon components); i. e., of the organosulfuric, nitrogen and oxygen compounds which belong to the composition of **petroleum**. . There are 160 references, 160 of which are Soviet.

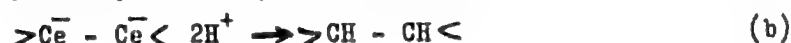
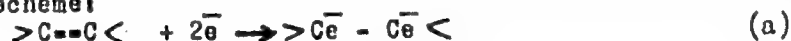
Card 3/3

Kazan'skiy, B.A. 20-2-26/60
 AUTHORS: Rozhkova, M. I., Gostunskaya, I. V., Kazan'skiy, B. A., Academician

TITLE: Reduction of Mono-Olefins by Sodium in Liquid Ammonia in the Presence of Tertiary Butyl Alcohol (Vosstanovleniye monoolefinovykh uglevodorodov natriyem v zhidkom ammiake v prisutstvi tretichno-butilovogo spirta)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 299 - 301 (USSR)

ABSTRACT: The reduction of the isolated carbon-carbon double bonds by alkaline metals in liquid ammonia apparently takes place according to an ionic scheme:



The total speed of the reduction reaction is determined by the relation of the speeds of two concurrent reactions: the addition reaction of hydrogen to the double bond of the olefin / (a) and (b) / and the separation reaction of the free hydrogen (v). These speeds are on their part dependent on the structure of the olefin, the nature of the metal and on the acidity of the protolytic agent. In

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Reduction of Mono-Olefins by Sodium in Liquid Ammonia in the Presence of Tertiary Butyl Alcohol 20-2-26/60

an earlier paper by the authors (reference 1) it was stated that α -monoolefins with a double bond more distant from the chain-end cannot be reduced by Na, K and Li in liquid ammonia in the presence of methyl- and ethyl-alcohol. The action of the two electron-giving alkyl groups at the double bond apparently renders the formation of the carbanion difficult. In other words the speed of reaction (a) is thereby reduced. Consequently the relative speed of the side-reaction (v) increases. It was therefore interesting to reduce monoolefins with different positions of the double bond in the presence of a weaker proton-source than methyl- and ethyl-alcohols. Thereby the speed of the side-reaction was to be reduced. As such a weak protolyte they selected tertiary butyl alcohol whose acidity (according to reference 2) amounts to 1/10 of that of ethyl alcohol. Sodium served as reducing metal. The following normally constructed monoolefins were subjected to the reduction: pentene-1, hexene-1, heptene-1, octene-1, nonene-1, decene-1, pentene-2, a mixture of hexene-2 and hexene-3, heptene-3 and finally octene-2. Most of these α -monoolefins may be more rapidly reduced in liquid ammonia in the presence of tertiary butyl alcohol than with the use of methyl- or ethyl-alcohol (table 1). β - and γ -monoolefins may under the same conditions only be reduced to a very limited extent, but the reaction is accelerated by certain modifications

Card 2/3

AUTHORS:

Liberman, A. L., Kuznetsova, I. M.,
Tyun'kina, N. I., Kazanskiy, B. A.,
Member of the Academy.

20-118-5-26/59

TITLE:

Stereoisomeric 1-Methyl-2-Alkylcyclohexanes (Stereoizomernyye
1-metil-2-alkiltsiklogeksany)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 5,
pp. 942-945 (USSR)

ABSTRACT:

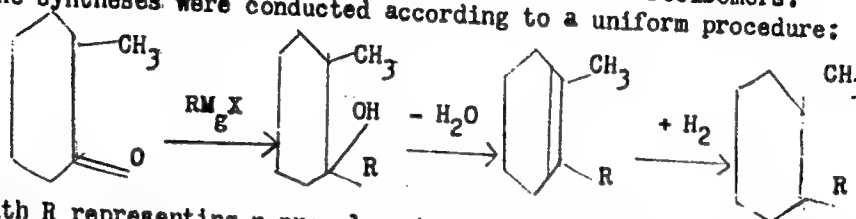
Data on dialkylcyclohexanes of this kind are rarely found in publications (references 1 - 6). For this reason their investigation is interesting in spite of great experimental difficulties. Certain surprising facts are found: the cis-isomer of 1,4-di-isopropylcyclohexane boils at a lower temperature than the trans-isomer (reference 5) though according to the rule of Auvers Skit the contrary would have been expected. The reason of this peculiar inversion of the boiling points remains unexplained and still waits for investigation. In order to find out whether such exceptions are found in the series of other dialkylcyclohexane hydrocarbons, for example among the 1,2-dialkylcyclo-

Card 1/3

Stereoisomeric 1-Methyl-2-Alkylcyclohexanes

20-118-5-26/59

hexanes, the authors synthesized some 1-methyl-2-n-alkylcyclohexanes, and separated them according to the stereoisomers. The syntheses were conducted according to a uniform procedure:



with R representing n-propyl, n-hexane, and n-heptyl. According to the results of the fractional distillation all stereoisomers were obtained in a highly pure form. It was proved that the constants of all hydrocarbons thus produced agree with the Auvers-Skit rule. 1-methyl-2-n-hexylcyclohexane and 1-methyl-2-n-heptylcyclohexane have as yet not been mentioned in publications, whereas 1-methyl-2-n-propylcyclohexane was obtained previously as a mixture of stereoisomers (reference 7) only, and not separated further by the mentioned authors. In the experimental part 7 compounds of the respective group are specified, among them one chloride and two bromides, as well as the usual data, are given.

There are 2 figures, 3 tables, and 11 references, 4 of which are Soviet.

Card 2/3

AUTHOR: Rozengart, M. I., Kazanskiy, B. A., 20-119-4-24/60
Member, Academy of Sciences, USSR

TITLE: Dehydrocyclization of n-Heptane on Aluminum-Chromium
Catalysts (Degidrotsiklizatsiya n-septana na
alyumokhromovyykh katalizatorakh)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 4,
pp. 716-719 (USSR)

ABSTRACT: The short time of action is one of the peculiarities
of the catalysts in question in the aromatization of
paraffinic hydrocarbons. They must be regenerated after
several hours since they are deactivated by coaly
deposits ("ooke"). The authors' experiments concerning
the process mentioned in the title showed that continuously
acting catalysts can be produced which remain active up
to 27 hours and have a yield of 67 percentage by weight
of aromatic compounds during this period. After 100
hours of action with periodic regenerations the duration
of the working period of the catalysts was reduced to
10 - 12 hours and did not change during the following

Card 1/3

Dehydrocyclization of n-Heptane on Aluminum-Chromium Catalysts 20-119-4-24/60

surpass the diffusion velocity of the hydrocarbons in the catalyst. There are 1 figure, 2 tables, and 9 references, 7 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo
Akademii nauk SSSR (Institute of Organic Chemistry imeni
N. D. Zelinskiy AS USSR)

SUBMITTED: December 26, 1957

Card 3/3

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721320002-4"

SOV/20-120-4-28 67

AUTHORS: Liberman, A. L., Loza, G. V., Chang Ming-nan, Kazanskiy,
B. A., Member, Academy of Sciences, USSR

TITLE: Catalytic Cyclisation of n-pentane and n-hexane Under Formation
of a five-Membered Ring (Kataliticheskaya tsiklizatsiya n-
pentana i n-geksana s obrazovaniyem pyatichlennogo tsikla)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 4, pp. 789-792
(USSR)

ABSTRACT: In several papers the authors proved that paraffin hydrocarbons
can easily be cyclised into cyclopentane homologues in the
presence of platinised coal (Refs 1 - 5). The yields in cyclo-
pentanes depend to a great extent on the structure of the initial
substances. n-pentane is particularly interesting since its
behavior is quite different from that of all its investigat-
ed homologues whereas n-hexane can be cyclised like n-octane.
From the point of view of thermodynamical experience n-pentane
is an exception (content 30 - 34 % instead of only 8 % in a
thermodynamical system of equilibrium of n-pentane - cyclo-
pentane at 500°K). At 510° n-pentane remains unchanged on a

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Catalytic Cyclisation of n-Pentane and n-Hexane Under Formation of a Five-Membered Ring

freshly prepared catalyst. The reaction sets in at 350°; however, still in a small yield. The reaction was carried on tentatively for several days. Strangely in the top fraction of the fractionation 25 - 30% isopentane (1,7% of the entire catalysate) was determined. Hitherto reliable proofs for the isomerisation of paraffin hydrocarbons on platinum-related coal have been lacking. The authors criticize the frequently mentioned paper by Yu. K. Yur'yev and P. Ya. Pavlov (ref 6) since they believe that the isoparaffins of those 2 authors were secondary products. As far as in hydrogenolysis of cyclopentane only n-pentane can be formed the occurrence of isopentane in the catalysate is due to a direct isomerisation. There are 4 tables and 9 references, 8 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR
(Institute of Organic Chemistry imeni N. D. Zelinskiy As USSR)

Card 2/3

Catalytic Cyclisation of n-Pentane and n-Hexane Under Formation of a Five-
-membered Ring SOV/20-120-4-28/67

SUBMITTED: February 26, 1958

- | | | |
|------------------------|----------------------------|-------------|
| 1. Pentanes--Catalysis | 2. Cyclohexanes--Catalysis | 3. Methanes |
| --Molecular structure | 4. Methanes--Isomerism | |

Card 3/3

5(3)

AUTHORS:

Kazanskiy, B. A., Academician, SOV/20-122-6-19/49
Liberman, A. L., Tyun'kina, N. I., Kuznetsova, I. M.

TITLE:

On the Limited Applicability of the Auwers-Skita Rule in
Stereoisomeric Dialkyl Cyclanes (Ob ogranichennoy primenimosti
pravila Auversa-Skita k stereoizomernym dialkiltsiklanam)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 6,
pp 1025-1028 (USSR)

ABSTRACT:

In recent years it was repeatedly noticed that the rule mentioned in the title cannot be applied to 1,3-dialkyl cyclopentanes and 1,3-dialkyl cyclohexanes. In these latter series the interrelation of the properties of cis-and trans-isomers is reversed. By the example of the stereoisomeric 1,3-dimethyl cyclopentanes and 1,3-dimethyl cyclohexanes this statement was confirmed by thermodynamic data as well as by synthesis. Recently the authors have observed such a case in which a peculiar deviation from the same rule took place (Ref 1) in the 1,4-dialkyl cyclohexane series. In this series the applicability of the rule under consideration was denied by nobody. It became evident that in the case of the

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On the Limited Applicability of the Auwers-Skita
Rule in Stereoisomeric Dialkyl Cyclanes

SOV/20-122-6-19/49

stereoisomeric 1,4-diisopropyl cyclohexanes the specific weight and the refractive index are higher, the molecular refraction, however, and the melting temperature of the isomer boiling at a lower temperature are lower; the spectroscopic data have shown that the latter isomer is a cis-form. So in this case not the trans- but the cis-form has a lower boiling-point - contrary to the rule mentioned. The observations so far collected make it possible to approach the problem of the relations between the configuration and the physical constants by a new method; the applicability of the rule mentioned is not only restricted by the arrangement of the side chains in the dialkyl-cyclane molecule, but also by the atomic number of carbon in the latter. The authors believe that the deviation described above is a regular phenomenon. The reflections mentioned make it possible to conclude that stereoisomeric 1,4-dialkyl cyclohexanes with 12 or a few more carbon atoms in the molecule must, similar to 1,4-diisopropyl cyclohexane, deviate from the rule under consideration. Thus the Auwers-Skita rule is only applicable

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On the Limited Applicability of the Auwers-Skita
Rule in Stereoisomeric Dialkyl Cyclanes

SOV/20-122-6-19/49

to the first members of the series of the 1,4-dialkyl cyclohexanes. By studying own data and those mentioned in publications on boiling temperatures of the stereoisomeric dialkyl cyclanes it can be concluded that the linear character of the dependence between the differences in boiling temperature of the stereoisomers and the atomic number of carbon in the molecule is not confined to the 1,4-dimethyl cyclohexane series, but applies also for the 1,2-dialkyl cyclopentanes (Table 2 and line A of Fig 1). In the stereoisomeric 1,2-dialkyl cyclanes discussed here the boiling temperatures of the trans-form increase more rapidly with increasing molecular weight than in the cis-forms. In these cases, however, the Auwers-Skita rule must have a somewhat wider range of applicability than for 1,4-dialkyl cyclohexanes. There are 1 figure, 3 tables, and 10 references, 5 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy, of the Academy of Sciences, USSR)

Card 3/4

5(3,2)

AUTHORS:

Lukina, M. Yu., Zotova, S. V.,
Kazanskiy, B. A., Academician

SOV/20-123-1-28/56

TITLE:

Effect of the Nature of the Carrier Exerted on the Direction
of Catalytic Hydrogenation of Hydrocarbons of the Cyclopropane
Series (Vliyaniye prirody nositeley na napravleniye reaktsii
kataliticheskogo gidrirovaniya uglevodorodov ryada tsiklopropana)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 1,
pp 105-108 (USSR)

ABSTRACT:

The authors have already previously reported (Ref 1) that in the
literature on the mentioned problem many opposing views are
presented. They concern the direction of cleavage of the
3-membered ring. Most of the authors assume that the linkage
between the two most hydrogenized carbon atoms (Refs 1-6) is
being cleaved under a hydrogen affiliation (I). But there are
also cases described of a ring cleavage in other directions
(II) (Refs 7-9). Ya. M. Slobodin and coworkers (Ref 9) conclude
that an intermediate stage of isomerization of the alkyl
cyclopropane to an olefin is interpolated; the olefin afterwards
being hydrogenated. The existence of an olefin in the products

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Effect of the Nature of the Carrier Exerted on the SOV/20-123-1-28/56
Direction of Catalytic Hydrogenation of Hydrocarbons of the Cyclopropane
Series

of an incomplete hydrogenation was proved by the Raman spectra. Reference 9 does not present any definite causes of the various cleavage directions of the 3-membered cycle. There is, however, one important factor which is capable of affecting the mentioned direction of cleavage, viz. the carrier of the hydrogenating metal, in so far as the employed catalysts are mostly used on carriers. As was previously proved by B. A. Kazanskiy (Refs 10, 11), silica gel and activated charcoal are able to catalyze the isomerization of cyclopropane hydrocarbons to olefins. It was but natural to assume that the hydrogenating metals, if they are applied on carriers which are able to cause isomerization resembling the two just mentioned cases, will lead under suitable conditions to different cleavage direction of the ring than this would be the case with inert carriers. Actually, in the first case that olefin is hydrogenated which is formed in the isomerization of alkyl cyclopropane (equation III); in the second case, the cyclopropane hydrocarbon itself will be hydrogenated (equation I). The relative isomerizing activity of such catalysts on carriers will thus determine the cleavage direction of the 3-membered ring.

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Effect of the Nature of the Carrier Exerted on the SOV/20-123-1-28/56
Direction of Catalytic Hydrogenation of Hydrocarbons of the Cyclopropane
Series

In the present paper the authors describe tests concerning the isomerization of cyclopropane hydrocarbons to olefins in the presence of: aluminum silicate, kieselguhr and pumice. On aluminum silicates, ethyl cyclopropane was nearly completely isomerized to a mixture of olefins of normal structure already at 50°; on kieselguhr, to 75 % at 120°, on pumice at 120° no isomerization occurred, only at 170°- 20 % were obtained, then at 220° - 45 %. Thus, the influence of a carrier being active as regards isomerization exerted upon the direction of the hydrolysis of the 3-membered ring is unquestionable. There are 5 figures and 15 references, 6 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR
(Institute of Organic Chemistry named N. D. Zelinsky of the
Academy of Sciences, USSR)

Card 3/4

5(3)

AUTHORS:

Gostunskaya, I. V., Gusar, N. I., SOV/20-123-5-23/50
Leonova, A. I., Kazanskiy, B. A., Academician

TITLE:

The Reduction of Diene Hydrocarbons With a Conjugate System
of Double Bonds by Hydrogen at the "Instant of Its Liberation"
(Vosstanovleniya diyenovykh uglevodorodov s sopryazhennoy
sistemoy dvoynnykh svyazey vodorodom "v moment vydeleniya")

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 5,
pp 853-856 (USSR).

ABSTRACT:

Hydrogen at the instant of its liberation is capable of
attaching itself to the diene hydrocarbons, not only in the
1.4-position, but also in the 1.2- and 3.4-positions (Refs
1-6). The sequence of the attachment depends on the structure
of the diene. The attachment in the 1.2- and 3.4-positions is
favored by the larger number of alkyl groups in the 1st and
4th terminal carbon atoms (di-isocrotyl and 2-methyl-hexadiene-
2.4): the alkyl groups at the 2nd and 3rd atoms of the
conjugate system have the same effect with regard to the
1.4-position (isoprene and di-isopropenyl). By the reduction
with sodium solution in liquid ammonia (Refs 1-4) or with
calcium-hexa-ammoniate (Refs 5-6), metal amides are formed

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The Reduction of Diene Hydrocarbons With a Conjugate SOV/20-123-5-23, 50
System of Double Bonds by Hydrogen at the "Instant of Its Liberation"

simultaneously with the hydrogen attachment to the double bond. It has recently become clear that the amides are capable of catalysing the displacement of the double bonds in mono- and diolefin hydrocarbons (Refs 7-10). Consequently, it could be expected that under certain conditions the structure of mono-olefins resulting from the attachment of a hydrogen molecule to the dienes should depend, not only on the structure of the initial diene, but also on the secondary reaction of the isomerization under the influence of the resulting metal amide. In order to eliminate the isomerizing effect of the metal amide, ethyl alcohol was added to the sodium solution in liquid ammonia (Ref 11). Besides, di-isopropenyl was reduced by calcium-hexa-ammoniate, and di-isocrotyl was reduced by sodium in liquid ammonia (Ref 2). The results are shown in table 1. From this it can be seen that on the reduction from all its sources at the moment of its liberation, hydrogen is attached almost exclusively in the 1.4-position of di-isopropenyl. The reduction of di-isocrotyl is less selective, although hydrogen is attached here in the 1.2-positions. From a comparison of the data for calcium-hexa-

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The Reduction of Diene Hydrocarbons With a Conjugate SOV/20-123-5-23/50
System of Double Bonds by Hydrogen at the "Instant of Its Liberation"

ammoniate as well as for sodium solution in liquid ammonia with those for the latter solution to which, however, ethanol has been added, it can be seen that although the secondary isomerization reaction somewhat modifies the results of the primary reaction, it does not distort them. Thus the rules governing the effect of the structure of dienes on the direction of their reduction, as specified in the papers by Levina, Kazanskiy, and collaborators, remain valid. There are 2 figures, 7 tables, and 16 references, 15 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: August 5, 1958

Card 3/3

5(3)

AUTHORS: Zhukhovitskiy, A. A., Kazanskiy, B. A., SOV/20-123-6-22/50
Academician, Sterligov, O. D. Turkel'taub, N. M.

TITLE: Chromatographic Analysis of C₅ Hydrocarbon Mixtures (Khromatograficheskiy analiz smesey uglevodorodov sostava C₅)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 6,
pp 1037 - 1040 (USSR)

ABSTRACT: The purpose of the present paper is the elaboration of a quick and sufficiently simple method of the quantitative analysis of isopentane-isoprene-isoamylene mixtures. Such mixtures are formed on dehydrogenation of isopentane into isoamylenes and isoprene. Their analysis was complicated and required much time (Refs 1-4). The authors successfully used a combination of two chromatographic methods: the partition chromatography (Ref 5) and the "chromathermography" (Ref 6). The methods were worked out on pure individual hydrocarbons and on their artificial mixtures. The universal "chromathermograph" was used for the analysis (Ref 7). Aluminum oxide and diatomite impregnated with dibutyl-phthalate

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Chromatographic Analysis of C_5 Hydrocarbon Mixtures SOV/20-123-6-22/50

(25% by weight) served as sorbents. The readings on the apparatus were automatically recorded by the potentiometer EPP-09. The results of the experiments with the cooperation of A. I. Karymova and P. S. Pavlova) are given in tables 1 and 2. Figure 1a shows the separation of a complex artificial mixture Nr 18 of C_5 -hydrocarbons. The chromatogram shows a distinct separation of all hydrocarbons except isopentane and 3-methylbutene-1. This binary mixture was separated with respect to aluminum oxide using "chromathermography" (Fig 2). The results were of satisfactory accuracy. The deciphering of the initial curve is of considerable importance in analyses of this type. Various methods are used for this purpose (Refs 8,9). There are cases of an incomplete separation of the components of the mixture. A method of calculation for the solution of this question (Ref 11) is suggested. Figures 1a and 1b show the application of "chromatography" to the investigation of the dehydrogenation products of isopentane. The mentioned universal apparatus can also be used for the determination of the purity of hydrocarbons.

Card 2/3

Chromatographic Analysis of C_5 Hydrocarbon Mixtures

SOV/20-103-6-22/50

There are 2 figures, 2 tables, and 11 references, 10 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR) Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut (All-Union Scientific Research Institute for Geological Prospecting of Petroleum)

SUBMITTED: October 20, 1958

Card 3/3

| | | |
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| 21(0), 28(0) | PHASE I BOOK EXHIBITION | 307, 311 |
| | Alma-Ata nauch SSSR. Fizicheskii institut | |
| | Zasludovaniya po eksperimental'noy i teoreticheskoj fizike: (sbornik) (Studies on Experimental and Theoretical Physics: Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 304 p. Errata slip inserted. 2,300 copies printed. | |
| | Ed.: I. L. Fabelinskiy, Doctor of Physical and Mathematical Sciences; Eds. of Publishing House: A. L. Chernyak and V. G. Berkaut, Tech. Ed.: Yu. V. Rylin; Commission for Publishing the Collection in Memory of Grigoriy Samuilovich Landsberg. In Ye. Tamm (Chairman), Academician M. A. Leontovich, Academician: S. L. Mandelstam, Doctor of Physical and Mathematical Sciences; S. L. Mandelstam, Doctor of Physical and Mathematical Sciences; I. L. Fabelinskiy, Doctor of Physical and Mathematical Sciences; P. S. Landsberg-Baryshanskaya, Candidate of Physical and Mathematical Sciences; and O. P. Motulevich (Secretary), Candidate of Physical and Mathematical Sciences. | |
| | PURPOSE: This book is intended for physicists and researchers engaged in the study of electromagnetic radiations and their role in investigating the structure and composition of materials. | |
| | CONTENTS: The collection contains 30 articles which review investigations in spectroscopy, ionics, molecular optics, semiconductor physics, nuclear physics, and other branches of physics. The introductory chapter, gives a biographical profile of O. S. Landsberg, Professor and Head of the Department of Spectroscopy of the Institute of Physics and Chemistry of the Academy of Sciences of the USSR, and reviews his work in spectroscopy, ionics, molecular optics, spectral analysis of metals, etc. No personalities are mentioned. References accompany each article. | |
| | Machulin, P. A., Y. I. Malyshev, and M. M. Gubinskiy. The Work of O. S. Landsberg in the Field of Molecular Spectroscopy II | |
| | Abraham, I. J. and A. M. Gubinskiy. Investigation of Transformation Processes in an Activated Discharge Generator Operating Under Conditions of Low Arc Currents | 27 |
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GAUSS, Karl Fridrikh [Gauss, Karl Friedrich]; [deceased]; DEM'YANOV, V.B. kand.fiz.-matem.nauk [translator]; VINOGRADOV, I.M., akademik, obshchiy red.; PETROVSKIY, I.G., akademik, red.; KUZNETSOV, I.V., kand.filos.nauk, red.; ANDREYEV, N.N., akademik, red.; KAZANSKIY, B.A., akademik, red.; SHCHERBAKOV, D.I., akademik, red.; YUDIN, P.F., akademik, red.; DELONE, B.N., red.; KOSHTOYANTS, Kh.S., red.; SAMARIN, A.M., red.; LEBEDEV, D.M., prof., red.; FIGUROVSKIY, N.A., prof., red.; RYVKIN, A.Z., red.isd-va; MAKOGONOVA, I.A., tekhn.red.

[Works pertaining to the theory of numbers] Trudy po teorii chisel. Obshchaia red. I.M.Vinogradova. Kommentarii B.N.Delone. Moskva, Izd-vo Akad.nauk SSSR, 1959. 978 p. (MIRA 13:2)

1. Chleny-korrespondenty AN SSSR (for Delone, Koshtoyants, Samarin).

(Numbers, Theory of)

LANDSBERG, Grigoriy Samuilovich, akademik [deceased]; KAZANSKIY, Boris
~~Aleksandrovich~~, akademik; BAZHULIN, P.A., doktor fiziko-matemat.
nauk; BULANOVA, T.F.; LIBERMAN, A.L., MIKHAYLOVA, Ye.A.; PLATE,
A.F.; STERIN, Kh.Ue.; SUSHCHINSKIY, M.M.; TARASOVA, G.A.; UKHOLIN,
S.A.; BRUSOV, I.I., red.izd-va; KASHINA, P.S., tekhn.red.

[Determination of the individual hydrocarbon composition of
straight-run gasolines by the combined method] Opreделение
individual'nogo uglevodoroda go sostava benzinov priamoi gonki
kombinirovannym metodom. Moskva, Izd-vo Akad.nauk SSSR, 1959.
362 p. (MIRA 12:8)

(Gasoline)

KAZANSKIY, B. A.

PHASE I BOOK EXPLOITATION

SOV/3494

Reaktsii i metody issledovaniya organicheskikh soyedineniy, Kn. 8 (Reactions and Research Methods of Organic Compounds, Bk. 8) Moscow, Goskhimizdat, 1959. 446 p. Errata slip inserted. 4,200 copies printed.

Eds (Title page): V.M. Rodionov, Academician (Deceased), B.A. Kazanskiy, Academician, I.L. Knunyants, Academician, M.M. Shemyakin, Academician, and N.N. Mel'nikov, Professor; Ed. (Inside book): V.P. Yevdakov; Tech. Ed.: V.F. Zazul'skaya.

PURPOSE: This book is intended for laboratory personnel at industrial plants, for instructors and students at higher educational establishments, and particularly for scientists and researchers working at the numerous research institutes in the Soviet Union.

COVERAGE: This is the eighth volume in a series "Reactions and Research Methods of Organic Compounds." This series does not duplicate the one published in English under the title "Organic Reactions" and appearing in Russian translation; however, some material, of particular interest, is included in this publication. The present series is primarily devoted to reviewing the works of Soviet chemists. The eighth volume of this series deals with thiocyanation

Card 1/5

Reactions and Research (Cont.)

SOV/3494

reactions of organic compounds and methods of studying them. It presents data on analytical methods using thiocyanates for the study of fats, mineral oils, and volatile oils. It discusses the use of thiocyanates for photographic emulsions, acceleration of rubber vulcanization, stabilization of lubricating oils, purification of tars, abatement of corrosion and purification of metals, production of mustard oil, and synthesis of sulfur-bearing compounds. It also discusses the use of thiocyanates as solvents for acrylonitrile polymers, as intermediate products in the synthesis of dyes, as antiseptics, bactericides, medicines, insecticides, and fungicides. The book contains 327 pages of tables listing 1449 initial organic compounds subjected to thiocyanation. The tables give formulas of the initial compounds, the names and structural formulas of the compounds, the reaction conditions, the reaction products and their yield percent as compared with the theoretical yield, as well as references to the literature on which the data are based. There are 797 references: 376 English, 228 German, 74 Soviet, 47 French, 17 Italian, 25 Japanese, 7 Polish, 7 Scandinavian, 3 Belgian, 8 Swiss, 1 Dutch, and 4 Hungarian.

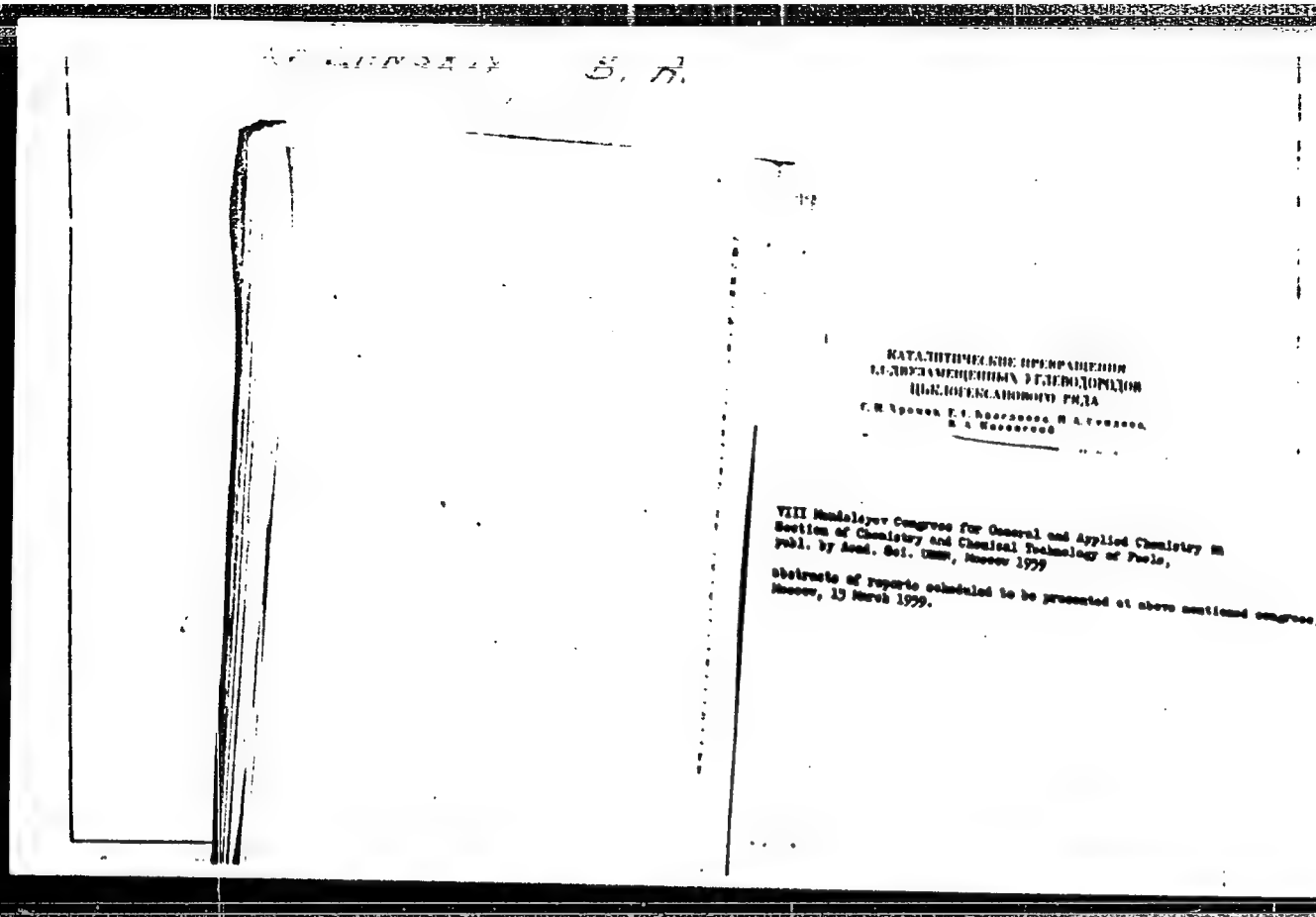
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Reactions and Research (Cont.)

80V/3494

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KAZANSKIY, B. A., LIBERMAN, A. L.

"Catalytic Dehydrocyclization of Paraffinic Hydrocarbons."

Report submitted at the Fifth World Petroleum Congress, 30 May -
5 June 1959. New York.

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SCV/156-59-1-37/54

AUTHORS:

Khromov, S. I., Radzhabli-Seidova, N. A., Kazanskiy, B. A.

TITLE:

The Contact Conversions of hem-Dialkyl-cyclohexane Hydrocarbons on an Alumosilicate Catalyst (Kontaknyye prevrashcheniya gem-dialkiltsiklogeksanovykh uglevodorodov na alyumosilikatnom katalizatore)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 1, pp 143 - 146 (USSR)

ABSTRACT:

An investigation made into the catalytic cracking of 1,1-dimethyl-cyclohexane, 1-methyl-1-ethyl-cyclohexane, 1-methyl-1-propyl-cyclohexane, and 1-methyl-1-butyl-cyclohexane, on an alumosilicate catalyst at 500°. In preliminary experiments this temperature had been found to be the optimum. The separation from the quaternary carbon atom of one or both alkyl groups occurred on the partial isomerization of the ring and hydration by means of hydrogen re-arrangement. Besides, a dehydration of the hexacyclic hydrocarbons into benzene and toluene takes place. The alkyl benzenes are probably formed in two ways: alkylation by cracking products of the benzene ring, and alkylation of the hexacyclic naphthenes with the

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Hydrocarbons on an Alumosilicate Catalyst

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formation of mainly dimethyl and trimethyl-cyclohexane on a subsequent dehydration into the corresponding aromatic hydrocarbons. The resulting gaseous hydrocarbons and liquid paraffins are cracking products. The main products of contact conversion among the hydrocarbons investigated were aromatic hydrocarbons; m-xylol and p-xylol are formed independently of the initial product in a ratio of 2:1. The ratio of liquid paraffins to naphthenes was approximately 1:3.5. Subsequently, data on the synthesis as well as the physical data (boiling points, refractive indices, etc) of the synthesized initial products are given (Table 1). In table 2 the conversion products established and their percentage share in the converted part of the initial substance are listed. With a rising number of carbon atoms in the alkyl group also the part of the initial substance that enters into the reaction rises. (In 1,1-dimethyl-cyclohexane 42.4% participated in the reaction as against 84.2% in the case of 1-methyl-1-butyl-cyclohexane). There are 2 tables and 9 references, 6 of which are Soviet.

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The Contact Conversions of hem-Dialkyl-cyclohexane
Hydrocarbons on an Aluminosilicate Catalyst

SSV/116-97-1-37/54

ASSOCIATION: Kafedra nefiti Moskovskogo gosudarstvennogo universiteta
im. M. V. Lomonosova (Chair of Petroleum of Moscow State
University imeni M. V. Lomonosov)

SUBMITTED: July 30, 1958

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5(3)

AUTHORS:

Georgiyev, Kh. D., Kazanskiy, B. A.

SOV/62-59-3-16/37

TITLE:

Dealkylation of Alkylaromatic Hydrocarbons and Their Derivatives in the Presence of an Aluminosilicate Catalyst (Dezalkilirovaniye alkilaromaticeskikh uglevodorodov i ikh proizvodnykh v prisutstviy alymosilikatnogo katalizatora). Communication 1. Kinetics of Monoalkylbenzenes Dealkylation (Soobshcheniye 1. Kinetika dezalkilirovaniya monoalkilbenzolv)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 3, pp 491-498 (USSR)

ABSTRACT:

In the present paper the dealkylation of 6 monoalkylbenzenes, such as ethyl-, n-propyl-, isopropyl- n-butyl-, secondary butyl-, and tertiary butylbenzene on an aluminosilicate catalyst was investigated. The investigation was performed according to the kinetic method and under conditions comparable for all 6 hydrocarbons. The experiments were carried out in the temperature range of 330-490° (for ethylbenzene of 490-550°) and at different time of contact between the reacting substances and the catalyst. It was found that the principal reaction in all experiments was the separation of the alkyl

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Kinetics of Monoalkylbenzenes Dealkylation

group from the benzene ring, benzene and an olefin corresponding to the alkyl group being formed. In addition to the principal reaction of dealkylation also side reactions take place such as redistribution of hydrogen, polymerization, and isomerization. They occur to a small extent only and concern merely the gaseous cracking products of monoalkyl benzenes. The liquid cracking product of the hydrocarbons investigated - benzene - is extremely stable under the given conditions and does not undergo any further changes. This fact facilitates the investigation of the cracking kinetics of monoalkylbenzenes, which is well defined by the equation of Frost (Refs 2,3). On the basis of the data obtained at different temperatures and volume rates apparent rate constants of dealkylation and, therefore, the apparent energies of activation were computed (Table 1). It was found that the depth and rate of cracking is considerably influenced by the length and structure of the side chain. This confirms the ionic character of the dealkylation of benzene homologues on silica-alumina catalysts. The catalytic transformations of monoalkylbenzenes in the presence of aluminosilicates differ both

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Kinetics of Monoalkylbenzenes Dealkylation

by the cracking products and the mechanism from the thermal transformations of these hydrocarbons. The values of the energy of activation indicate the different mechanism as well. There are 3 figures, 6 tables, and 13 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 2, 1957

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5(3)

AUTHORS: Georgiyev, Kh. D., Kazanskiy, B. A. SOV/62-59-3-17/37

TITLE: Dealkylation of Alkylaromatic Hydrocarbons and Their Derivatives in the Presence of Aluminosilicate Catalyst (Dezalkilirovaniye alkilaromaticeskikh uglevodorodov i ikh proizvodnykh v prisutstvii alyumosilikatnogo katalizatora). Communication 2. Kinetics of Dialkylbenzenes Dealkylation (Soobshcheniye 2. Kinetika dezalkilirovaniya dialkilbenzolov)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 3, pp 499-506 (USSR)

ABSTRACT: It is known from publications (Refs 1-5) that during cracking of the cymenes the principal reaction is the separation of the isopropyl group, toluene and propylene being formed herein. It was found that the depth of dealkylation under otherwise equal conditions depends on the position of the methyl group with respect to the isopropyl group. The influence of the position of the second substituent in the benzene nucleus upon the depth of dealkylation of cymenes was determined only qualitatively and by a few experiments. For this reason the behavior of 3 isomeric cymenes during catalytic cracking on the synthetic aluminosilicate catalyst was investigated.

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Dealkylation of Alkylaromatic Hydrocarbons and Their SOV/62-59-3-17/37
Derivatives in the Presence of Aluminosilicate Catalyst. Communication 2.
Kinetics of Dialkylbenzenes Dealkylation

In studying the contact-transformations of o-, m-, and p-cymenes it was seen under given conditions that the principal reaction was the separation of the isopropyl group, toluene and propylene being formed. The absence of cumene and benzene indicates that the methyl group is not separated during the cracking of cymenes. In addition to the principal reaction also side reactions take place such as redistribution of hydrogen, polymerization and isomerization. But as well as in the case of monoalkylbenzenes their significance is small and concerns only the separated isopropyl group. Toluene remains practically unchanged and may be regarded as an end product of the cracking of cymenes. The kinetics of dealkylation is well defined by the equation of Frost (Refs 8,9). On the basis of the data obtained at different temperatures and time of contact between the reacting substances and the catalyst the apparent rate constants of dealkylation and, therefrom, the apparent energies of activation were computed (Table 1). For comparison also the data regarding the dealkylation of isopropylbenzene are given (also Fig 1). The different effect

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Dealkylation of Alkylaromatic Hydrocarbons and Their SOV/62-59-3-17/37
Derivatives in the Presence of Aluminosilicate Catalyst. Communication 2.
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of the methyl group on the rate of separation of the isopropyl group according to the position of both groups suggests an ionic mechanism of the cracking of hydrocarbons in the presence of aluminosilicate catalysts. The p-diisopropylbenzene was first investigated during catalytic cracking. The experiments have shown that there not only benzene but also cumene is formed (Table 2). As may be seen from the table the quantity of cumene at 410° is considerably higher than that of benzene. At temperature increase of up to 490° the quantity of unreacted p-diisopropylbenzene as well as the quantity of cumene decreases and the quantity of benzene increases. Apparently this reaction proceeds according to the type of the consecutive reactions, the cumene being formed as an intermediate compound. It is dealkylated to benzene while it is still in the zone of reaction. This reaction, however, requires a more intense investigation. There are 4 figures, 8 tables, and 18 references, 8 of which are Soviet.

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Dealkylation of Alkylaromatic Hydrocarbons and Their SOV/62-59-3-17/37
Derivatives in the Presence of Aluminosilicate Catalyst. Communication 2.
Kinetics of Dialkylbenzenes Dealkylation

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 9, 1957

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5(3)

AUTHORS:

Kazanskiy, B. A., Lukina, M. Yu.,
Cherkashina, L. G.

SOV/62-59-3-29/37

TITLE:

Isomerization of Vinyl Cyclopropane in the Presence of Kieselguhr (Izomerizatsiya viniltsiklopropana v prisutstvii kizel'gura)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 3, pp 553-554 (USSR)

ABSTRACT:

This is a brief communication on the experiment to determine the influence exercised by the conjugated double bond on the stability of the three-membered cycle during the isomerization. It is known that alkyl cyclopropanes isomerize relatively easily under the action of a series of catalysts and pass into an olefin mixture (Refs 3-5). The authors used kieselguhr for their investigation because in its presence ethyl cyclopropane is isomerized almost completely at 120° (Ref 5). The experiments carried out with vinyl cyclopropane under the same conditions have shown that quite unexpectedly no piperylene was present in the catalyst. With the exception of the first few drops the catalyzate showed constants of the initial hydrocarbon and produced no adduct with maleic anhydride. At 150° not more than

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Isomerization of Vinyl Cyclopropane in the Presence of SOV/62-59-3-29/37
Kieselguhr

10 % of diene were observed in the catalyzate. It was obvious to assume that vinyl cyclopropane is more reaction-resistant than ethyl cyclopropane. This was, however, refuted in the course of further experiments. It was found that the three-membered cycle which is conjugated with a double bond may be isomerized in the presence of kieselguhr. The degree of stability of the cycle in this case cannot be determined according to the amount of the forming piperylene since the latter completely poisons the catalyst. There are 3 tables and 6 Soviet references.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskogo of the Academy of Sciences, USSR)

SUBMITTED: July 18, 1958

Card 2/2

KAZANSKIY, B. A.

A. L. Liberman and B. A. Kazanskiy, "On the Connection between the Configurations of Dialkyl Cyclohexanes and Their Physical Properties."

report presented at the Symposium on Concepts of Conformation in Organic Chemistry which took place in Moscow at the IOKhAN SSSR (Institute of Organic Chemistry, AS USSR) from September 30 to October 2, 1958.

Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1959, No. 3, 561-564.

5(4)

SOV/62-59-4-7/42

AUTHORS:

Gonikberg, M. G., Levitskiy, I. I., Kazanskiy, B. A.

TITLE:

Investigation of the Influence of the Hydrogen Pressure on the Rate of the Heterogeneous Catalytic Isomerization of Cyclohexane (Issledovaniye vliyaniya davleniya vodoroda na skorost' geterogennno-kataliticheskoy izomerizatsii tsiklogeksana). Communication 1. Kinetics of the Isomerization of Cyclohexane Over a Tungsten Sulfide Catalyst (Soobshcheniye 1. Kinetika izomerizatsii tsiklogeksana na vol'fram-sul'fidnom katalizatore)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 4, pp 611-616 (USSR)

ABSTRACT:

In the present work the isomerization of cyclohexane and methyl cyclopentane on the industrial WS_2 catalyst under hydrogen pressure has been investigated. The first series of experiments was conducted at a degree of dilution of 19-24 $\left(\delta = \frac{H_2}{C_6H_{12}} \right)$ and at temperatures of 320° , 340° , 370° , 400° , and 430° (Table 1). This shows that the isomerization at 320° and 340° becomes weaker

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SOV/62-59-4-7/42

Investigation of the Influence of the Hydrogen Pressure on the Rate of the Heterogeneous Catalytic Isomerization of Cyclohexane. Communication 1. Kinetics of the Isomerization of Cyclohexane Over a Tungsten Sulfide Catalyst

when the total pressure is increased from 50 to 250 atmospheres. At 370° the yield of products changed only slightly. At 400° and 430° the yields increased strongly. The selectivity of the process showed only a small change with temperature but decreased upon an increase in pressure. To clarify the observed effect another series of experiments was conducted in which the action of the hydrogen and cyclohexane partial pressures on the conversion of cyclohexane was observed. Results obtained during experiments carried out at 430° and 340° with constant contact time, partial pressure, and cyclohexane feed rate but with different hydrogen partial pressures are given in table 2. It is seen that the increase in hydrogen partial pressure has only a small influence on the intensity of isomerization at 430°, whereas this intensity is strongly reduced at 340°. It has been found that the kinetic order of the reaction with cyclohexane in the range investigated equals 0.4. Table 3 gives the results of the series of experiments conducted with cyclohexane at 340° and constant hydrogen pressure. It has been found that the rate con-

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SOV/62-59-4-7/42

Investigation of the Influence of the Hydrogen Pressure on the Rate of the Heterogeneous Catalytic Isomerization of Cyclohexane. Communication 1. Kinetics of the Isomerization of Cyclohexane Over a Tungsten Sulfide Catalyst

stant of the reaction at 430° does not depend on the hydrogen partial pressure. The intensification of the isomerization observed at this temperature upon an increase in total pressure is due to the longer contact time. It has been found that the logarithm of the rate constant of the reaction at 340° decreases linearly upon an increase in hydrogen partial pressure. There are 2 figures, 3 tables, and 4 references, 3 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: July 2, 1957

Card 3/3

5(3)

AUTHORS:

Georgiyev, Kh. D., Kazanskiy, B. A.

SOV/62-59-4-21/42

TITLE:

Dealkylation of Alkylaromatic Hydrocarbons and Their Derivatives in the Presence of the Aluminum Silicate Catalyst (Dezalkilirovaniye alkilaromaticeskikh uglevodorodov i ikh proizvodnykh v prisutstvii al'yumosilikatnogo katalizatora). Communication 3. Dealkylation Kinetics of o- and p-Chlorocumenes (Soobshcheniye 3. Kinetika dezalkilirovaniya o- i p-khlorkumolov)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 4, pp 699-704 (USSR)

ABSTRACT:

In the present paper o- and p-chlorocumenes were catalytically dealkylated. The investigations were carried out by the kinetic method on a device with continuous flow under comparable conditions: volume of the catalyst 10 ml, temperatures: 370, 410, 450, and 490°, reaction rate: 0.80, 1.60, 3.12 h⁻¹. It was found that in connection with the cracking of o- and p-chlorocumenes under assumed conditions a separation of the isopropyl group in form of propylene takes place under simultaneous formation of chlorobenzene. In the analysis of the catalysate and crack gases no products were found indicating the

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Dealkylation of Alkylaromatic Hydrocarbons and Their SOV/62-59-4-21/42
Derivatives in the Presence of the Aluminum Silicate Catalyst.
Communication 3. Dealkylation Kinetics of o- and p-Chlorocumenes

separation of the chlorine atom. In this connection also secondary reactions take place, to a limited extent, which however, refer to the separated isopropyl group (propylene) only. Chlorobenzene remains practically unchanged so that it may be considered as the final product of chlorocumene dealkylation. The dealkylation kinetics of o- and p-chlorocumenes are well described by the Frost equation (Refs 6 and 7). Apparent rate constants and apparent activation energies are shown in table 1. Figure 1 shows the kinetics of cracking. On account of the experimental data found the mechanism of the dealkylation of chlorocumenes appears to be similar to that of mono- and dialkylbenzenes. The chlorocumene mixture was synthesized by means of condensation of isopropyl alcohol with chlorobenzene in the presence of aluminum chloride (Ref 8). The mixture was fractionated in vacuum. The results of the distillation are shown in table 2, the distillation curve is shown in figure 2. Figure 3 shows the distillation curve of the catalysate of the experiment with o-chlorocumene at 490°, reaction rate 1.60 h^{-1} . Table 3 shows the

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results of the distillation according to fractions. Tables 4 and 5 show the compositions of the crack gases and tables 6 and 7 the yields in the products of cracking and data on their transitions. The kinetic characteristics computed by the Frost equation are shown in tables 8 and 9. There are 3 figures, 9 tables, and 10 references, 8 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 9, 1957

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